

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-26 are pending, with claims 1-2, 7, 10, 14-15, 17 and 19 amended, and claims 21-26 added by the present amendment. Claims 1, 10, 15, 17 and 18 are independent.

In the Official Action, claim 14 was objected to; claims 1-15 and 17-19 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Christopher (U.S. Patent No. 5,008,820) and Tsutsui (U.S. Patent No. 6,668,158); and claims 16 and 20 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Christopher, Tsutsui and Applicant's Admitted Related Art (AARA).

Claim 14 is amended in response to the current objection. Claims 1-2, 7, 10, 14-15, 17 and 19 are amended, and claims 21-26 are added, to more clearly describe and distinctly claim Applicant's invention. Support for this amendment is found in Applicant's originally filed specification. No new matter is added.

Briefly recapitulating, amended claim 1 is directed to

A file searching method of a data broadcasting system, the method comprising the steps of:

when a search of a file object is requested, confirming whether or not a Download Server Initiate control message is updated, the Download Server Initiate control message including a basic root directory and at least two directories located at the lower hierarchical architecture of the root directory; and

when the Download Server Initiate control message is confirmed to have been updated, searching for the file object from a directory object located at the lower hierarchical architecture of the updated root directory.

Christopher describes a method for rapidly opening a file after such file has been initially opened at least once. Christopher maintains a history table containing entries for each file that has been opened and for each sub-directory included in the path to such file. However, as acknowledged by the Official Action, Christopher does not disclose or suggest the use of Download Server Initiate functions or messages. Thus, Christopher does not disclose or suggest confirming whether or not a Download Server Initiate control message is updated, in response to a search request for a file object; or searching for the file object from an updated root directory object, when the Download Server Initiate control message is confirmed to have been updated.

Tsutsui describes a method and device for downloading content data. In particular, Tsutsui describes a module divided into blocks for every predetermined unit. Each block is allotted a header and converted into a format referred to as DBB (Download Data Block). On the other hand, a control message referred to as DII (Download Inform Indication) containing information on the size of a module required for receiving the module at the receiver side and a control message referred to as DSI (Download Server Initiate) containing information which indicates the address of a root directory of a data service at the receiver side are created. The three types of messages, i.e., DBB, DSI and DSI are periodically and repeatedly outputted and transmitted in an annular structure referred to as a carousel so that the reception side can receive it at any time.

In Tsutsui, the control CPU 58 sets the packet ID (PID) of the DSI at the demultiplexer 80 (see FIG. 10) in the transport ID 53 and acquires DSI data (in a step 144). The control CPU 58 analyzes the acquired DSI data and acquires the PID of the DII having root directory information (in a step 145). The control CPU 58 sets the PID of the DII at the demultiplexer 80

in the transport IC 53 and acquires DII data (in a step 146). Based on the DSI data and the DII data, a file in the lower directory to be transmitted is read (in a step 147).

However, as noted in Applicant's last filed response, Tsutsui fails to disclose or suggest a) confirming whether or not a Download Server Initiate control message is updated, in response to a search request for a file object; and b) searching for the file object from an updated root directory object, when the Download Server Initiate control message is confirmed to have been updated. That is, while Tsutsui discloses using the DSI data (and the DII data) to read a file in the lower directory, Tsutsui does not disclose updating the DSI data in response to historical searches.

The Official Action argues that Christopher describes "searching for the file object from an updated root directory object, when the Download Server Initiate control message is confirmed to have been updated." Applicant traverses. However, in order to expedite progress toward allowance, claim 1 is further amended to recite "when the Download Server Initiate control message is confirmed to have been updated, searching for the file object from a directory object located at the lower hierarchical architecture of the updated root directory."

The cited portion of Christopher describes creating and maintaining a history of file usages in a cache in main memory. Each time a directory or file is to be accessed, the history is checked and, if the information required for opening is in the cache, the cached information is used directly without the need for further tree searching for any directory or filename that might involve physical I/O activity. By maintaining a cache in main memory, information is accessed at high speed and avoids the lower speeds associated with disk physical I/O activity. (See Christopher, col.2, lines 24-35)

However, the use of caching for rapid opening of files is not equivalent to nor related to “when the Download Server Initiate control message is confirmed to have been updated, searching for the file object from a directory object located at the lower hierarchical architecture of the updated root directory,” as recited in amended claim 1.

Furthermore, while col. 10, lines 35-57 and Fig. 7 of Tsutsui describes that a DSI contains information which indicates the address of a root directory of a data service at the receiver side, Tsutsui does not disclose or suggest how to use the DS to search for data. Thus, Tsutsui does not disclose or suggest a Download Server Initiate control message including a basic root directory and at least two directories located at a lower hierarchical architecture of the root directory. Similarly, Tsutsui does not disclose or suggest “when the Download Server Initiate control message is confirmed to have been updated, searching for the file object from a directory object located at the lower hierarchical architecture of the updated root directory,” as recited in amended claim 1.

Turning now to amended independent claim 10, Applicant submits the applied references do not disclose or suggest Applicant’s claimed absolute path representing a path for the updated root directory object existing in a whole hierarchical architecture of a basic root directory object designated by the DSI control message.

Applicant further submits that the applied references do not disclose or suggest confirming whether or not information concerning a basic root directory object of a Download Server Initiate control message is updated, in response to a search request for a file object, wherein the information includes the basic root directory object and at least two directories, as recited in amended independent claim 15.

Applicant further submits that the applied references do not disclose or suggest Applicant's claimed absolute path comprising at least two directory object paths to be skipped in searching the file object, as recited in amended independent claim 17.

Applicant further submits that the applied the applied references do not disclose or suggest Applicant's claimed step of updating the first Download Server Initiate control message to include an absolute path for the file object in response to said step of searching in response to the first search request, as recited in independent claim 18. The cited portion of Christopher (col. 3, lines 53-65 and col. 4, lines 25-35) only describes a) updating a table in a cached and b) providing updated path information to a user, and does not disclose or suggest updating Download Server Initiate control message.

A file searching method of a data broadcasting system, the method comprising the steps of:

receiving a first search request for a file object;

searching for the file object from a basic root directory object of a first Download Server Initiate control message in response to the first search request;

updating the first Download Server Initiate control message to include an absolute path for the file object in response to said step of searching in response to the first search request;

receiving a second search request for the file object; and

searching for the file object from an updated root directory object of a next hierarchical architecture of the absolute path, based on the updated Download Server Initiate control message.

Applicant has considered AARA and submits AARA does not cure the deficiencies of Christopher and Tsutsui. As none of the cited art, individually or in combination, discloses or suggests at least the above-noted features of independent claims 1, 10, 15, 17 and 18, Applicant submits the inventions defined by claims 1, 10, 15, 17 and 18, and all claims depending

therefrom, are not rendered obvious by the asserted references for at least the reasons stated above.¹

CONCLUSION

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

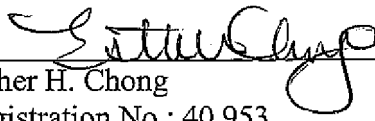
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael E. Monaco (Reg. No. 52,041) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

Dated: December 17, 2008

Respectfully submitted,

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¹ MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations.